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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP Suite 3400 Four Embarcadero Center San Francisco, CA 94111-4187			EXAMINER QUAN, ELIZABETH S	
			ART UNIT 1743	PAPER NUMBER

DATE MAILED: 02/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/881,052

Applicant(s)

LEBL ET AL.

Examiner

Elizabeth Quan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-88 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 32, 34-37, 40, 42-51, 54, 58-65, 67-75, 77-81 and 83-88 is/are rejected.
- 7) ☒ Claim(s) 33, 38, 39, 41, 52, 53, 55-57, 66, 76 and 82 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 6/13/2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

2. The drawings are objected to because they fail to show nozzles structurally connected to the plurality of linear actuators and rotary actuator, such that the nozzles are linearly arranged in a pattern corresponding to a radial column of the array or reaction vessels or arranged in a pattern matching the array of reaction vessels. Fig. 4 shows the nozzles that are not connected to the actuator. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the plurality of dispensing nozzles divided into first and second sets of nozzles, liquid aspiration including the rotor for carrying the vessel and orbiting the vessel about an axis of rotation, egress aperture extends radially outwardly with respect to the axis of rotation, valve, electric solenoid valve must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 38 is objected to because of the following informalities: "actuator" in the second line should be "actuators". Appropriate correction is required.
5. Claim 41 is objected to because of the following informalities: "38" should be "40" to provide antecedent basis for "said rotary actuator". Appropriate correction is required.
6. Claim 82 is objected to because of the following informalities: "linear" in the third line should be "rotary". Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 40-43, 47-49, 54, 67, 68, 71-75, 82, 86, 87 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claims 40, 41, 67, 68, 82, the limitation of a rotary actuator effecting movement of the liquid dispenser has never been disclosed in the application. Regarding claims 42, 43, 71, 72, 86, 87, the limitations of actuating the nozzles and dispensing fluid while the rotor or dispensing head is moving along the circular path were never

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mentioned in the specification and original claims. Drawings are not sufficient to illustrate these functional limitations. Regarding claims 47-49, 73-75, the limitations of the plurality of nozzles forming first and second sets of nozzles as well as their simultaneous or sequential actuation were never mentioned in the specification and original claims or shown in the drawings.

Regarding claim 54, the limitation of the egress aperture extending radially outwardly with respect to the axis of rotation was never mentioned in the application. It is unclear how the egress aperture could ever extend radially outwardly with respect to the axis of rotation. The axis of rotation is not through each reaction vessel but the center of the rotor.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

10. Claim 51 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. Regarding claim 51, the language makes it unclear whether there is a separate rotor for the liquid aspirator or the liquid aspirator is part of the previously recited rotor. For examination purposes, the liquid aspirator is part of the previously recited rotor.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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13. Claims 32, 34-36, 38, 40, 44-46, 58, 59, 63, 65, 67, 69, 70, 77, 78, 80-83, 85 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,042,338 to Huber.

Huber discloses an apparatus for dispensing liquids into a reaction vessel (figs. 1-4). The apparatus comprise a rotor (10), motor (16), liquid dispenser (24), and controller (18) (fig. 3; col. 3, lines 36-41). The rotor is mounted for rotation about a central axis (fig. 3). The rotor carries an array of reaction vessels (12) along a circular path (col. 3, lines 36-41). The motor rotates the rotor about a central axis and moves the array of reaction vessels along a circular path (fig. 3; col. 5, line 47-col. 6, line 51). The liquid dispenser is a multi-channel dispenser with a plurality of dispensing nozzles (62) (fig. 3). The liquid dispenser is fluidly coupled with different reagent sources in different containers (40A-40C). The liquid dispenser is positioned above the rotor and arranged for movement to align the dispensing nozzles with the plurality of reaction vessels and dispensing liquid from each nozzle into a respective reaction vessel (col. 6, lines 9-51). A plurality of linear actuators are operably connected to the liquid dispenser and controlled by the controller (fig. 3; col. 5, line 46-col. 6, line 51). The controller is configured to actuate the linear actuators to move the plurality of dispensing nozzles from a first upper position to a second upper position (fig. 3; col. 5, line 46-col. 6, line 51). A rotary actuator (66) is operably connected to the liquid dispenser and controlled by the controller (fig. 3; col. 5, line 46-col. 6, line 51). The controller is configured actuate the rotary actuators to move the plurality of dispensing nozzles (fig. 3; col. 5, line 46-col. 6, line 51). The plurality of dispensing nozzles is linearly arranged in a pattern corresponding to a radial column of 3 reaction vessels of the array of reaction vessels (fig. 3). Specifically, the embodiment of fig. 3 discloses that the plurality of nozzles move from a first upper position to a second upper position, such that each nozzle is

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arranged above a reaction vessel (col. 6, lines 9-51). Each nozzle comprises a dispensing valve (56,58) for controlling liquid delivery thereto (fig. 3; col. 6, lines 9-51). The controller is configured to simultaneously synchronize movement of the rotor and the liquid dispenser and control of the dispensing valves since it discloses that a controller synchronizes the various operations (col. 3, lines 36-41; col. 5, line 47-col. 6, line 51). The apparatus is configured for chemical and oligomer synthesis (abstract).

14. Claims 77, 83-85, 88 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,844,868 to Rokugawa.

Rokugawa discloses an apparatus for performing combinatorial-chemistry synthetic reactions (figs. 1-6). The apparatus comprises a rotor (36), centrifugal motor (38), liquid dispenser (40) with a plurality of nozzles (32), and controller (figs. 1-6). The rotor includes an array (6) of reaction vessels (4) each of which is configured for containing a combinatorial-chemistry synthetic reaction (figs 1-6). The centrifugal motor rotates the rotor about a central axis and moves the array of reaction vessels along a circular path (figs. 1-6). The liquid dispenser is positioned above the rotor and arranged for movement to align the dispensing nozzles with a plurality of reaction vessels for dispensing liquid from each dispensing nozzle into the respective reaction vessel (figs. 1-6). The controller controls the liquid dispenser and array of reaction vessels such that the plurality of dispensing nozzles dispenses liquid into the reaction vessels (col. 5, lines 35-61). The reaction vessel array comprises reaction tube cassettes, which may be considered a microtiter plate since microtiter plates come in different shapes and sizes.

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Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

18. Claims 37, 38, 40, 61, 62, 64, 65, 67, 79, 81, 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,042,338 to Huber.

Although Huber does not explicitly disclose that the dispensing valves are electric solenoid valves, there is a good chance that they are electric solenoid valves since the system is

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electrically controlled. Regardless, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use electric solenoid valves since they are very well known in precision dispensing.

Although Huber does not explicitly disclose the step of performing chemical synthesis in at least one of the reaction vessel, particularly synthesis of oligomers, there is a good chance that byproducts may be formed in performing flameless atomic absorption spectroscopy such that it may be considered a synthesis. Regardless, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the apparatus of Huber to perform chemical synthesis, particularly synthesis of oligomers as necessary or desired since it is very well known to efficiently perform synthesis in such automatic devices.

Although Huber does not explicitly disclose linear and rotary actuators in those exact terms, it is highly likely that linear and rotary actuators are behind the vertical and rotating movement of the liquid dispenser. Regardless, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Huber to provide linear and rotary actuators since they are very well known to provide movement to the liquid dispenser.

19. Claims 42, 71, 86 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,042,338 to Huber in view of U.S. Patent No. 4,808,380 to Minekane.

Huber fails to disclose that the controller is configured to actuate the nozzles and dispense fluid while the rotor is moving along the circular path. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Huber to provide a continuously moving rotor such that actuating the nozzles and

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dispensing fluid occurs while the rotor is moving along the circular path to encourage efficient dispensing as taught by Minekane.

20. Claims 50, 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,042,338 to Huber in view of U.S. Patent No. 4,837,159 to Yamada.

Huber fails to disclose each reaction vessel with an egress aperture and liquid aspirator for aspirating liquid through the egress aperture. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Huber to provide each reaction vessel with an egress aperture and liquid aspirator for aspirating liquid through the egress aperture to better facilitating draining and cleaning the reaction vessels as taught by Yamada (figs. 4A-4D and 7A-C).

Allowable Subject Matter

21. Claims 33, 39, 52, 53, 55-57, 66, 76 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. Claims 41, 43, 47-49, 54, 68, 72-75, 87 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Double Patenting

23. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).


24. Claims 32-88 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 6,663,832. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patented claims include all the limitations of the instant claims. The only difference between the instant and patented claims is that the instant claims are broader.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (571) 272-1261. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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Supervisory Patent Examiner
Technology Center 1700

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